APR/87

ZX-Appeal

vancouver sinclair users group

next meeting:

KILLARNY COMMUNITY CENTRE
6260 KILLARNY STREET
VANCOUVER

FRIDAY;7:00PM

APRIL 10/87

ZXAppeal is a monthly newsletter put out by the Vancouver Sinclair Users Group. For more information on the group and ZXAppeal see the backcover.

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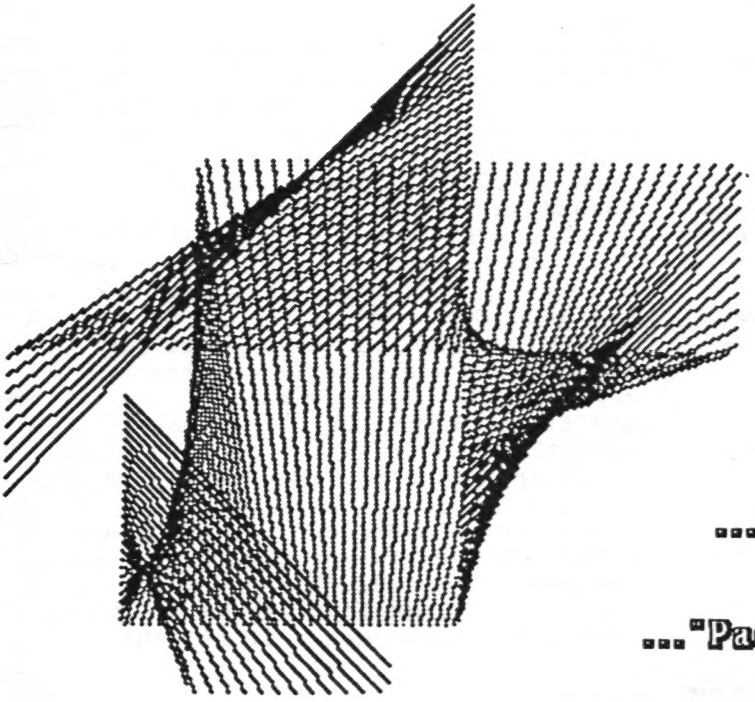


THIS MONTH:

..."Clone of Sinclair"!

...the Zeeper returns!

..."Packet Radio" on the 1000!

THIS ISSUE.....

Spring is sprung...etc. and time for another thrill packed issue of YOUR newsletter. Once again you guys came thru - lots of submissions. Two major reports again this month: John B. describes his version of Packet Radio on the 1000, and Ken D. gives us his impressions of the 'clone of Sinclair' - the PC 8300. The Zeeper shows up again - as if we cared. We continue Harvey T's 'Playing With...' from last time. We include a drawing program from Joe. J. left out of last issue due to space limitations. Ken A. submits a couple of goodies - how to utilize the unused speaker of your T.V. monitor, & some reviews of educational software. Rusty T. sends along two programs dealing with 'numbers'. Vince L. is back with 'Ramdisk', a utility program for NVM. Gerd B. gives us his 'Member Profile'. BYTE POWER is back as an advertiser - I've seen their cassette magazine and I can recommend it highly and will give an indepth review in an upcoming issue. If space permits, a number of interesting articles from the NETWORK will also be included this issue.

****

BITS & PIECES.....

...another BBS you might like to have a look at - Mind Link - at 533-2312 or 278-5543. Their brochure describes their system as being very sophisticated.

...does your QL have a screen 'shimmy'? Try plugging the computer and monitor into different outlets. Worked for me. Previous screen barely watchable and now solid as a rock.

...watch out when you buy I.C. chips from R.A.E. Their policy is NO RETURNS - PERIOD. The speech chip I bought last week had a thermal defect that only came up after more than a minute of use. Of course it would test okay. I had to resort to reminding them that the Sale of Goods Act provides that an article must do what it is proported to do at the time of sale otherwise damages are collectable in small claims court.

...another thing to be on the lookout for: Canada Customs now forwards packages and bills the recipient of dutiable goods rather than requiring that you go down to the main post office to pick up your package and pay the duty. Great you say. I've received 5 invoices from them for applicable duty and 3 are incorrect. Canada Customs says that this is not a reflection of their standard of work but that I've just been 'unlucky'. Watch out that the value they place on the goods is correct and that the rate of duty is also correct. Computer hardware is subject to 3.9% duty added then another 12% federal sales tax on the total. Software is ONLY subject to 12% FST - no duty.

...the latest Canada Computes will be passed out at the meeting.

...elections. It's that time again. If you want to have a part in keeping the club running then nominate yourself or someone else who wants to help out. Everyone should take a turn. Nominations will be accepted at the next meeting for the position of Prez, V/Prez, Sec, Trez, & members-at-large. And lets have everybody show up this time. This meeting has the lowest attendance each year.

...VSUG will be represented at the T/S Computerfest in Indianapolis May 2nd & 3rd. This writer has decided to 'hang the cost' and go. I'm looking forward to the opportunity to meet the various TS notables and maybe picking up some bargains at the TS suppliers booths and the swap/flea market.

...Sharp's has 4 QL microcarts for $6.95us. These are used but reuseable. I ordered a set and found a most curious thing: the carts were all copies of EASEL but one was version 1.01, another was v2.0, the next was v2.2 French edition, the

last was v2.21 Spanish edition.
...the QL Kit Draw draws nigh. 41 tickets were sold last meeting and in the mail since. Only 26 left so those who've been leaving it to the last or want to up their odds had better hurry. To hasten things along I'll buy the last 5 tickets after all the rest are gone. We'll ask the lady at the front office of the Centre to pull the winner when all are sold.

****

All articles appearing in ZXAppeal may be reprinted by User Groups as long as credit is given to the author and VSUG.

RENEWING MEMBERS:

Francis Wilson
Dave Noordhoff
Kenton Garrett
Rois Harder

NEW MEMBERS:

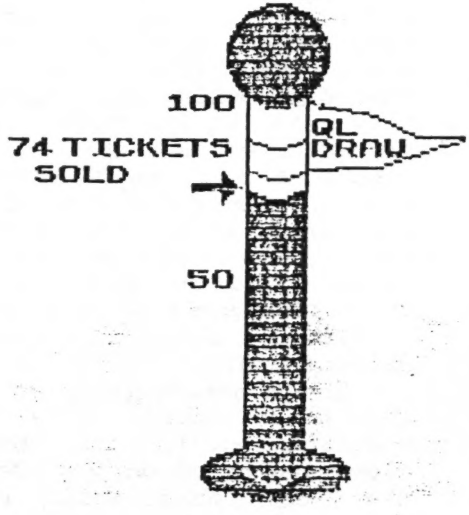
Don Walterman, Sterling Heights, MI

Remember to renew at the meeting if you received the dreaded EXPIRY NOTICE.

****

Meeting date...

APRIL						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		



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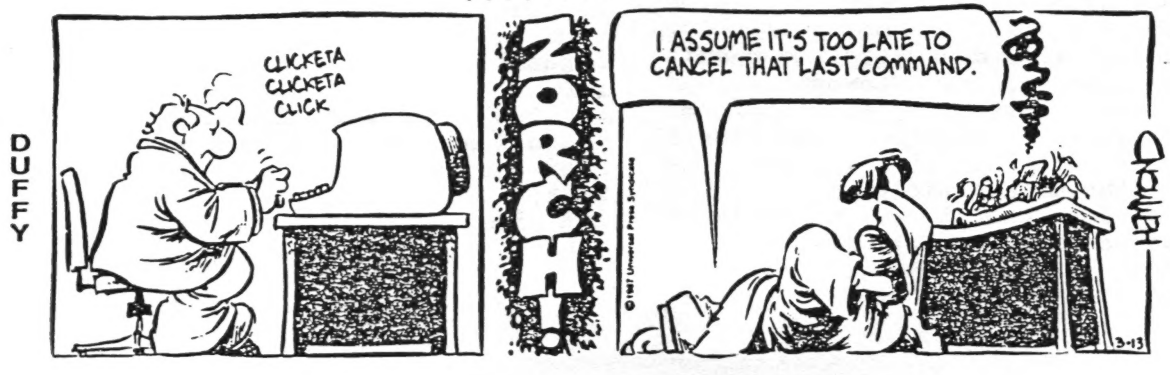

MINUTES MARCH 13/87 - By your humble scribe

The meeting was opened at 19:16 by Ken the prez & Gerd started things off on a Friday the 13th note by immediately leaving. There were 21 present and 11 others dribbled in thereafter.

Rod the Editor/Treasurer had to leave early because of a previous wedding, so we heard from him first. Rod reports we have $497.77 in the credit union, plus a QL in pieces & one ZVoice board left. Rod mentioned that Tim Stoddard's 3 chip 64K for the ZX81 will cost approximately US$38.00. There will be an upcoming article by him in Time Designs magazine about it. Once again the POWER3000, enhanced ZX81, is being advertised. This time by American Design Components; and they call it the PC8300. Nobody around here has one yet. Rod also mentioned that there was some queston as to whether Zebra was still up & going. Dave Ross tells me he did get his last order, so there is no reason to think they are not still viable.

Ye dread elections approacheth.

The hardware group mentioned they were looking at a simple modification to use the Karl Brown I/O board on the 2068. [By the way, Karl tells me his Robotics article will be in April BYTE.] The "Harry Slot 2 dollar Special" edge connector for the ZX81 is now available. Harry also described the result of some of his investigations about substandard .01 microfarad capacitors on the tape input jack of the ZX81. See the forthcoming article.

Ian the librarian tells us we have 100+ ZX81 programs in the library now, although documentation is weak.

Harvey mentioned he has almost the complete QUANTA QL library now, although some of it is begware.

We took another kick at the ongoing debate surrounding COPYWRITE & the 2068 library. Many views were expressed; nothing was decided. Wilf Rigter made the entirely reasonable suggestion that we use the Software SIG contributions as the core of a 2068 library. Ian says as well that he cannot serve as the contact person for the Software SIG: any volunteers?

Rod Humphries showed us all the disassembled QL which arrived this month - for 3 minutes pandaemonium reigned - then the meeting came to order once again. Nobody could quite believe it! Then Rod split for his anniversary celebration.

Bill Reutter tried to find out if anyone was interested in a club supply of cheap computer grade tapes. The response was lukewarm at best.

Wilf Rigter asked how many people were interested in an RS232-C board for the ZX81 (& possibly 2068?) & there were about 10 hands went up. He then mentioned that he was designing a 32k static board for the ZX81.

Harvey tried without luck to get a list of computer magazines each member reads for a future article herein. If you read any unusual & or obscure such magazines, leave him a note please.

The meeting dissolved to demonstrations of ZVoice on the 2068 and a screen dump for the 2068, with madcap merriment on the side.

Continued from last month's 'Playing With...'

```
100 REMark Display Exception Table
110 REMark          User Vectors
120 REMark          Trap#1 Routines
130 REMark For the JSU ROM : JS,JM,AH,MG roms may be different
140 REMark By Harvey Taylor ( June 86 - Jan 87 )
150 LAYOUT
160 CSIZE 3,1
170 AT 3,10 : PRINT 'DEROM8'; : CSIZE 0,0
175 AT  8,40: PRINT '-Harvey Taylor'
180 AT 15,20: PRINT 'Use (CTRL)(F5) to slow output'
190 SPACE
200 EXC_VECTORS 1
210 SPACE
220 VECTLIST 1
230 SPACE
240 TRAP1LIST 1
250 STOP
260 :
270 REMark ************************************************************
280 :
290 DEFine PROCedure VECTLIST(CHAN)
300   LOCal CH
310   REMark I made the Channel a variable to make it easy to get a print out.
320   CH=CHAN
330   CLS
340   UNDER 1
350   PRINT#CH,\'CODE','VECTOR',,'ADDRESS'\\
360   UNDER 0
370   RESTORE 470
380   FOR addr=192 TO 298 STEP 2
390     READ VECTOR$
400     PRINT#CH, HEX$(addr,12),VECTOR$;: PRINT#CH, TO 25;HEX$(PEEK_W(addr),16)
410   END FOR addr
420   VECTOR$='Undocumented'
430   FOR addr=300 TO 314 STEP 2
440     PRINT#CH, HEX$(addr,12),VECTOR$;: PRINT#CH, TO 25;HEX$(PEEK_W(addr),16)
450   END FOR addr
460 END DEFine VECTLIST
470 DATA 'MM.ALCHP','MM.RECHP','UT.WINDW','UT.CON'
480 DATA 'UT.SCR','UT.ERR0','UT.ERR','UT.MINT'
490 DATA 'UT.MTEXT','UT.LINK','UT.UNLNK','UNKNOWN','MM.ALLOC'
500 DATA 'MM.LNKFR','IO.QSET','IO.QTEST','IO.QIN'
510 DATA 'IO.QOUT','IO.QEOF','UT.CSTR','IO.SERQ'
520 DATA 'IO.SERIO','CN.DATE','CN.DAY','CN.FTOD'
530 DATA 'CN.ITOD','CN.ITOD8','CN.ITOBW','CN.ITOBL'
540 DATA 'CN.ITOHB','CN.ITOHW','CN.ITOHL','CN.DTOF'
550 DATA 'CN.DTOI','CN.BTOIB','CN.BTOIW','CN.BTOIL'
560 DATA 'CN.HTOIB','CN.HTOIW','CN.HTOIL','BP.INIT'
570 DATA 'CA.GTINT','CA.GTFP','CA.GTSTR','CA.GTLIN'
580 DATA 'BV.CHRIX','RI.EXEC','RI.EXECB','BP.LET'
590 DATA 'IO.NAME','MD.READ  + 4000','MD.WRITE + 4000','MD.VERIN + 4000'
600 DATA 'MD.SECTR + 4000'
610 REMark
620 REMark ************************************************************
630 REMark
640 DEFine PROCedure TRAP1LIST (CHAN)
650   LOCal CH
660   CH=CHAN
670   base1=HEX('474')
680   base0=HEX('462')
690   CLS
700   UNDER 1
710   CSIZE 3,1 : AT 0,5 : PRINT#CH\'TRAP#1' : CSIZE 0,0
720   PRINT#CH\'0       NAME              ADDRESS'
730   UNDER 0
740   RESTORE 820
750   FOR N= 0 TO 36
760     offset=PEEK_W(base1+2*N)
770     address=offset + base0
780     READ trap1$
790     PRINT#CH,HEX$(N,8),trap1$; : PRINT#CH, TO 25;HEX$(address,24)
800   END FOR N
810 END DEFine TRAP1LIST
820 DATA 'MT_INF','MT_CJOB','MT_JINF','UNKOWN','MT_RJOB'
830 DATA 'MT_FRJOB','MT_FREE','MT_TRAPV','MT_SUSJB'
840 DATA 'MT_RELJB','MT_ACTIV','MT_PRIOR','MT_ALLOC'
850 DATA 'MT_LNKFR','MT_ALRES','MT_RERES','MT_DMODE'
860 DATA 'MT_IPCOM','MT_BAUD','MT_RCLCK','MT_SCLCK'
870 DATA 'MT_ACLCK','MT_ALBAS','MT_REBAS','MT_ALCHP'
880 DATA 'MT_RECHP','MT_LXINT','MT_RXINT','MT_LPOLL'
890 DATA 'MT_RPOLL','MT_LSCHD','MT_RSCHD','MT_LIOD'
900 DATA 'MT_RIOD','MT_LDD','MT_RDD','MT_TRANS'
910 REMark
920 REMark ************************************************************
930 REMark
940 DEFine PROCedure EXC_VECTORS (CHAN)
950   LOCal CH
960   CH=CHAN
970   CLS
980   UNDER#CH, 1
990   CSIZE 3,1 : AT 0,5 : PRINT 'VECTORS'\\ : CSIZE 0,0
1000   PRINT #CH,'Exception Vector Assignment'\
1010   PRINT#CH,\'VECTOR# VECTOR  NAME'\\
1020   UNDER#CH, 0
1030   RESTORE 1200
1040   FOR addr=0,4
1050     READ EXCVECT$
1060     PRINT#CH,addr/4, HEX$(PEEK_L(addr),24),EXCVECT$
1070   END FOR addr
1080   FOR addr=8 TO 36 STEP 4
1090     READ EXCVECT$
1100     PRINT#CH,addr/4, HEX$(PEEK_L(addr),24),EXCVECT$
1110   END FOR addr
1120   PRINT#CH,'VECTORS#10->23 (BLOCK $28->$5E) Contain CODE'
1130   FOR addr=96 TO 188 STEP 4
1140     READ EXCVECT$
1150     PRINT#CH,addr/4, HEX$(PEEK_L(addr),24),EXCVECT$
1160   END FOR addr
1170   PRINT#CH,'VECTORS#48->78 (BLOCK $C0->$13A) User Vectors'
1180   PRINT#CH,'VECTORS#79->255 (BLOCK $13C->$3FF) Contain CODE'
1190 END DEFine EXC_VECTORS
1200 DATA 'RESET : INITIAL SSP','RESET : INITIAL PC'
1210 DATA 'BUS ERROR','ADDRESS ERROR','ILLEGAL INSTRUCTION'
1220 DATA 'ZERO DIVIDE','CHK INSTRUCTION','TRAPV INSTRUCTION'
1230 DATA 'PRIVILEGE VIOLATION','TRACE'
1240 DATA 'SPURIOUS INTERRUPT','LEVEL 1 INTERRUPT AUTOVECTOR'
1250 DATA 'LEVEL 2 INTERRUPT AUTOVECTOR','LEVEL 3 INTERRUPT AUTOVECTOR'
1260 DATA 'LEVEL 4 INTERRUPT AUTOVECTOR','LEVEL 5 INTERRUPT AUTOVECTOR'
1270 DATA 'LEVEL 6 INTERRUPT AUTOVECTOR','LEVEL 7 INTERRUPT AUTOVECTOR'
1280 DATA 'TRAP#0','TRAP#1','TRAP#2','TRAP#3','TRAP#4','TRAP#5'
1290 DATA 'TRAP#6','TRAP#7','TRAP#8','TRAP#9','TRAP#10','TRAP#11'
1300 DATA 'TRAP#12','TRAP#13','TRAP#14','TRAP#15'
1310 :
1320 REMark ************************************************************
1330 :
1340 DEFine PROCedure LAYOUT
```

```
1350   WINDOW 512,202,0,0   : PAPER 0   : INK 4
1360   WINDOW#2,512,202,0,0 : PAPER#2,0 : INK#2,4
1370   BORDER#0,5,0 : BORDER#1,5,0 : BORDER#2,5,0
1380   INK#0,2 : PAPER#0,0 : MODE 4
1390 END DEFine LAYOUT
1400 DEFine PROCedure SPACE
1410   REPeat LOOP
1420     CLS#0:AT#0,2,20:PRINT#0,'(SPACE) to continue          (ESC) to quit'
1430     KEY = CODE(INKEY$(-1)) : CLS#0
1440     IF KEY = 32: EXIT LOOP
1450     IF KEY = 27: STOP
1460   END REPeat LOOP
1470 END DEFine SPACE
```

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TALKING EDUCATIONAL SOFTWARE

By Ken Abramson

Yes, speech synthesis is finally available in off-the-shelf educational software. The 1987 Scholastic (Canadian) software catalog lists three talking elementary school programs for the Apple 2c/e/GS.

SCHOLASTIC SOFTWARE
123 Newkirk road
Richmond Hill, Ontario
L4C-3G5

TALKING TEXT WRITER: This is a talking word processor program for preschool to grade 6 level children. The word processor supports 20, 40, or 80 columns and contains a good variety of processing commands such as: insert, move, copy, alter, and delete. Preschoolers can listen to the computer speak letters as they are entered. primary level children can hear the words, sentences, and stories they compose. This program has great potential for learning disabled persons. Cost: $199.95 (the Echo or Cricket speech board costs $149.95, but can be obtained for $69.95 if ordered together with the software). Wouldn't it be nice if somebody came up with a talking version of WORD SINC II (hint, hint)?

TALKING TEXT LIBRARY I & II: These are story disks that read stories out loud as the text is displayed on the screen. Disk 1 is for grades K & 1, Disk 2 is for grades 2 & 3. I'm not too wild about this particular application (there are more effective ways of teaching reading or telling stories). There may be some initial novelty value to a computer reciting THREE BILLY GOATS GRUFF or JACK & THE BEANSTALK, but I don't know if it is worth the $79.95 cost per disk.

TALKING TEXT SPELLER: This program sounds quite useful, depending on the educational context in which it is used. It can display and say words from lists on the disk, or you can enter your own word lists. This idea could easily? be developed for the TS1000 or 2068 by any interested club members, using some of Wilf Rigter's speech programming ideas (Oct/86 Newsletter) and using somewhat less RAM than the Apple's 128K. Price: $139.95

CALLING ALL VSUG PROGRAMMERS!! Now that we have a few speech boards floating around the club, perhaps some of our programmers could come up with some simple speech applications or subroutines that could be added to existing programs. You might wish to have the computer say a few simple phrases during a game, or tell each player his score. You could program a talking clock, or "HELP" messages in educational programs. There is a whole new programming dimension just waiting to be tapped!!

If you DO come up with a neat voice application, please SHARE IT WITH US! Demonstrate it at a club meeting, write an article, make it available through our library, or at least tell us about it!

****

FOR SALE

--ZX81
--TS1000
--TS1016
--2050 MODEM
--2040 PRINTER
--SEARS RECORDER
--MEMOTECH 16K RAM
--QSAVE FILTER & SOFTWARE
--MEMOTECH KEYBOARD(BLACK)
--MISC SOFTWARE,BOOKS,MAGS

IF YOU ARE INTERESTED IN ANY OF THE ABOVE, CALL

BRIAN 463-5769

would like to sell as a set but will consider breaking up

THE ZEEPER SPEAKS...

By popular request, THE OMNIPOTENT ZEEPER has returned to grace this humble rag with his presence. Well now let's see what is in my little bag of goodies for the refugees of the computer world. We had an incredible laugh at the last meeting of ZEEPERS INTERNATIONAL. Good Ol' Clive is still trying to make computers. Now this is the same guy that brought you the membrane keyboard, the non-ASCII character set, cassette storage, and single-handedly re-invented the 8-track as a storage device. To top it off, this guy set a new standard for the absolute worst level of after-sales support for any computer.

This man is actually planning to enter the MS-DOS world. This man took one of the most sophisticated microprocessors in the world (68008) and completely ruined it by putting it into a QL! The only machine in the world that uses not hard drives, not floppies, but mini 8-tracks. The display is weird, the keyboard is weird, and the operating system is weird. Now he is making the Z-88. I wonder what Sir Clive can do to an 8088 chip? It is claimed that it will have the capacity to hold the entire works of Shakespeare. That's the first hint, it will have an operating system that only understands Elizabethan English. Forget any thoughts of IBM compatibility. You are going to see yet another computer with little boxes stuck on the back of it to include all the things necessary to turn it into a semi-civilized computer. The after-market will once again have to rescue another Sinclair computer. The first add-on will be an "improved" keyboard.

When the Z-88 finally shows up in North America, it will be complete with enough Sinclair weirdness that it won't even rate reviews. It will originally be marketed to the holders of K-Mart credit cards. It will be incompatible with any known monitor with special adaptor cables. It will only output to the 2040 printer. In keeping with the Sinclair standard, the Z-88 will have a totally bizarre storage medium. I foresee a built-in miniature open-reel tape recorder.

As a final note, you will be glad to note that Amstrad has been infected with Sinclair madness. Their MS-DOS machine, the PC 1512 is almost perfect. It has a great price, lots of options, full compatibility, plenty of features. What's wrong with it? The power supply is in the monitor. You have to use the Amstrad monitor. Shades of Adam.

TIMEX 1000 CLONE
...by Ken Duda

If you own a Timex 1000 or a ZX-81, then you must surely have a list of all the things you wished Sinclair or Timex would have done to improve the ZX81/1000. About a month ago I saw an advertisement for the PC 8300 computer. Amongst other things, they claimed it would run all Timex/ZX81 software. I thought 'how could I go wrong?'.

After a few weeks of waiting, I received the PC 8300. Upon opening the shipping box, I was surprised to find that this little jewel of a computer was made in CHINA! The accompanying instruction book was written in both English and Chinese! The computer has undergone some major changes. A little late for some of us but probably not for those still very much into the 1000.

The first thing that stands out is the case - instead of the small black wedge with membrane keys, you'll find a cream colored case, very similar to that of the 2068, with green chiclet keys. Gone are the connections on the left side - everything is found at the back. From left to right connections are: EAR, MIC, MONITOR, edge connector (in the middle), JOYSTICK PORT, TV plug.

I started out by connecting a composite monitor to the Monitor jack. Upon powering up, I was greeted with a white lettered 'READY' message in the upper left hand of the black screen. After playing with the machine for half an hour, the following became evident: the only single-key functions remaining are the math symbols, all other keywords must be typed in; spaces do not have to be typed in, they are added automatically upon ENTERing; line numbering to the next appropriate number is automatic upon pressing the Line Number key; a RESET key is at the top right of the keyboard next to the power on LED; all graphics symbols are located on the bottom three rows of keys and no more shifting to graphics mode; the arrow keys are center of the bottom row of keys and the rear JOYSTICK port is tied to them; there is even a built in loud programmable speaker - examples of musical tunes are given in the manual.

The keys respond with a BEEP sound when pressed - the top row giving a higher pitch, the bottom row the lowest. Keyboard BEEP can be turned off by typing 'NOBEEP' and ENTER. If you still have your old ZX81 Rampack, plug it in - it will work. And no Rampack Wobble - the Rampack doesn't touch the table surface and is a very tight fit. There's more but that'll wait until another time. Order one and enjoy what we wished Sinclair had included.

****

ZX81/TS1000 (2K/16K) ZVOICE TEST

BY KEN ABRAMSON

TYPE THE FIRST REM STATEMENT EXACTLY AS SHOWN, AND DO NOT ENTER ANY SPACES. "PEEK" AND "TAN" ARE ENTERED AS SINGLE KEY FUNCTIONS.

```
  10 REM YYPEEK ↑TAN
  20 PRINT AT 9,0;"ZVOICE TEST F
OR THE ZX81/TS1000";TAB 11;"(2K/
16K)"
  40 DIM S$(86)
  50 LET S$="42151134512613373145
2037151155040404255804550919500
4253111121304124304465242194434040
4"
  60 FOR N=1 TO 43
  70 POKE 16515,VAL S$(2↑N-1 TO
2↑N)
  80 RAND USR 16514
  90 NEXT N
 100 FOR N=1 TO 50
 110 NEXT N
 120 GOTO 60
```

Adopted from P. Hunter, August 1983 Radio Electronics.

R A M D I S K

V. Lee 1987

With the available memory, this utility will allow Basic programs to be stored in ram in either the 8 to 16 K region or in the area above Ramtop; perfect for use with ZxAppeal's July 1986 NVM or with the soon to be announced 32K NVM. Unlike saving to cassette, this utility will not save variables unless they are stored in a Rem statement.

Main Menu:

The Main Menu allows three options. Press;

1 for Examine Memory
2 for Install Ramdisk
3 for Quit

Examine Memory:

This option is used for organizing the available ram for storage. Input a starting location and the contents will be shown in Hex, Decimal and in its Character form. Choose;

1	for	More	:Dsiplays the next series.
2	for	Search	:Provides the cursor to allow input for a different memory location.
3	for	Clear	:Select both a starting and ending address and the area will be cleared.
4	for	Finish	:Return to Main Menu.

Install Ramdisk:

By partitioning the ram, more than one program can be stored. Each partition must contain its own encoded Machine Code instructions and the availble ram for storage. Inputs are asked for the desired locations to store the Machine Code instructions and a recommended location to store a program will be given. Once completed there will be three new commands available and the Main program is no longer needed.

RAND USR X	:Saves a program to location L.
RAND USR Y	:Loads a program from location L. Always execute the New command first, otherwise the loading program will merge with the existing program.
PRINT USR Z	:Calculates the size of the program in the 16K to Ramtop region. (excluding variables and display.)

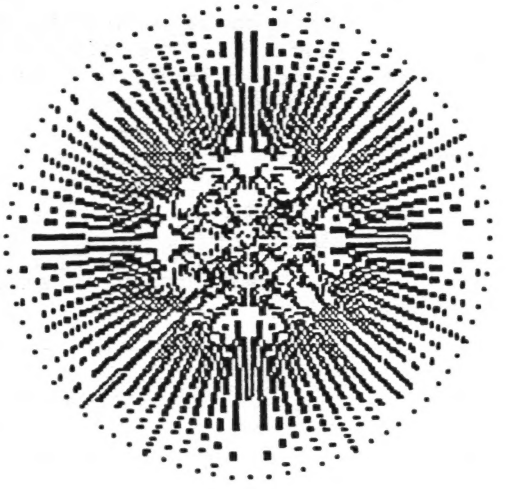
Values for X and L are given by the User and the program will calculate the values for Y and Z.

```
   1 REM LN 77)?RNDE£RND■ GOSUB
???52J???? FOR GOSUB ■TAN LN 77
GOSUB ?2JE£RNDVAL FAST FLN ■.SGN
 AT 54J GOSUB ■TAN )?RNDE£RNDLEN
  GOSUB ???TAN
   2 REM
   3 REM  FROM P. HUNTER AUG83
   4 REM  RADIO ELECTRONICS
   5 REM  MODIFIED FEB87 V. LEE
  10 CLS
  20 SLOW
  30 PRINT AT 4,9;"R A M D I S K
";AT 6,6;"■■■■■■■■■■■■■■■■■■■■";A
T 10,7;"1. EXAMINE MEMORY";AT 13
,7;"2. INSTALL RAMDISK";AT 16,7;
"3. QUIT"
  40 LET I=CODE INKEY$-28
  50 IF I<1 OR I>3 THEN GOTO 40
  60 CLS
  70 GOTO VAL "080330580"(I*3-2
TO I*3)
  80 PRINT ,,"INPUT STARTING ADD
RESS."
  90 INPUT A
 100 FAST
 110 CLS
 120 FOR C=0 TO 21
 130 LET H=PEEK A
 140 LET L=INT (H/16)
 150 PRINT A;TAB 6;CHR$ (L+CODE
"0")+CHR$ (H-16*L+CODE "0");TAB
9;H;TAB 13;CHR$ H
 160 LET A=A+1
 170 NEXT C
 180 PRINT AT 0,23;"1. MORE";AT
2,23;"2. SEARCH";AT 4,23;"3. CLE
AR";AT 6,23;"4. FINISH"
 190 SLOW
 200 LET I=CODE INKEY$-28
 210 IF I<1 OR I>4 THEN GOTO 200
 220 GOTO VAL "100090230010"(I*3
-2 TO I*3)
 230 PRINT AT 11,23;"STARTING";A
T 13,23;"ADDRESS?"
 240 INPUT D
 250 PRINT AT 16,23;"END";AT 18,
23;"ADDRESS?"
 260 INPUT R
 270 FAST
 280 FOR C=D TO R
 290 POKE C,0
 300 NEXT C
 310 LET A=A-22
 320 GOTO 110
 330 PRINT "INPUT LOCATION TO ST
ORE","RAMDISK UTILITIES."
 340 INPUT R
 350 LET A=R
 360 PRINT ,,"INPUT LOCATIONS TO
 STORE","PROGRAM. MINIMUM IS ";R
+62;"."
 370 INPUT P
 380 IF P<R+62 THEN GOTO 360
 390 FAST
 400 LET H=INT (P/256)
 410 LET L=P-H*256
 420 REM  SAVE=R0
 430 POKE 16529,L
 440 POKE 16530,H
 450 REM LOAD=R■■■
 460 POKE 16544,L
 470 POKE 16545,H
 480 POKE 16558,L+2
 490 POKE 16559,H
 500 FOR C=16514 TO 16575
 510 POKE A,PEEK C
 520 LET A=A+1
 530 NEXT C
 540 CLS
 550 PRINT AT 5,0;"M E N U",,"■■
■■■■■";AT 10,0;"RAND USR ";R;":S
AVE TO ";P;AT 13,0;"RAND USR ";R
+25;":LOAD FROM ";P;AT 16,0;"PRI
NT USR ";R+49;":PROGRAM LENGTH";
AT 21,0;"PRESS ENTER TO CONTINUE
."
 560 INPUT I$
 570 GOTO 10
```

Create Rem statement 1 large enough to hold 62 bytes and then run the following program to load the machine code.

```
600 LET A$ ="CD230F117D402A0C40B7
            ED52444D211E2F712370
            23EBEDB0C9CD230FED4B
            1E2F2A0C40C5E52BCD9E
            09D1C121202FEDB0C911
            7D402A0C40C600ED5244
            4DC9"
610 LET I =16514
620 FOR N =1 TO LEN A$ STEP 2
630 POKE I,(CODE A$(N)-28)*16+
    CODE A$(N+1)-28
640 LET I=I+1
650 NEXT N
```

Then delete line 600 to 650.



BBS Services Available in British Columbia

NAME	NUMBER	HOURS	Comments
The Abacus --------	985-2890	24 HRS	Sysop: John Gyulasi
The Abyss ---------	888-3598	24 HRS	
Adam West ---------	467-9566	24 HRS	Sysop: Gerry Apple Board
Advantage Computers	430-2442	24:00-09:00	
Agora BBS ---------	463-4811	24 HRS	Liberal Christian 3/1200
Air-Net -----------	???-????	16:00-10:00	3/1200 baud Aviation employees
Alpha Centauri -----	936-1750	16:30 Fri to 7:30 Mon.	Students of S.D. 43
AlterNet -----------	872-6968	24 HRS	IBM with FidoNet software 3/1200
Anything Goes BBS --	520-6919	24 HRS	Sysop: Phymen
The Apex -----------	321-4581	unsure	Apple users ONLY!
Arcadia -----------	263-5041	24 HRS	Blue Board Sysop: Red Knight
The Arcane Bimmer --	875-9788	24 HRS	Sysop: Enchanter
The Basement -------	534-2876	24 HRS	Sysops: Grud & The Bic Blue Bd.
Baud Boys Bedroom --	588-3542	22:00-06:00	
Binary Stock Exch. -	266-1531	24 HRS	Commodore/Atari/IBM 3/1200
Bit by Byte BBS ----	581-6310	21:00-17:00	CoCo/Unionists
Blue Hell ----------	926-8192	24 HRS	Sysop: Beelzebub
Broadway BBS -------	435-9427	24 HRS	10 megs online
Burnaby ------------	524-9564	24 HRS	ANSI graphics 3/1200 baud
B.C.I.T. -----------	430-3371	24 HRS	3/1200 baud
B&B's Vic20/C64 ----	985-5042	24 HRS	Sysop: The Commodore Man
Call of the Wild ---	597-1964	24 HRS	
Castle ARRGH -------	873-4807	24 HRS	Sysop: Yellowbeard
Cirrus -------------	535-1382	24 HRS	1200 baud Mon-Thurs 300 otherwise
CityLink** ---------	222-2000	24 HRS	3/12/2400 baud
Color Pacific ------	738-2773	24 HRS	TRS80 board
CommNet ------------	594-5954	24 HRS	IBM 1200 baud ANSI only 300 baud OK 12M to 8:00
Commodore CC -------	271-1082	24 HRS	Sysop: Glen Hazlewood
Comm-Only ----------	987-3408	24 HRS	Closed Sundays
Requires monthly password .. available from Conti Computers			
Compudome BBS ------	464-6716	24 HRS	
Compuserve** -------	738-5157	24 HRS	
Computer Kitchen ---	538-3839	24 HRS	Sysop: Redneck
Compu-Swap ---------	589-3482	21:00-09:00	
Comstar ------------	521-0886	24 HRS	3/1200 baud
Critical Mass -----	590-8283	24 HRS	3/1200 baud Devoted to the Amiga
Crunchy Frog -------	937-5132	24 HRS	Sysop: Bicycle Rep. Man
Datanet ------------	589-5441	24 HRS	IBM/DEC/Rainbow board 3/1200 baud
Datapac #1** -------	689-8601	24 HRS	
Datapac #2 ---------	689-8003	24 HRS	
Datapac ------------	687-7144	24 HRS	1200 baud
Deep Cove BBS ------	929-6183	24 HRS	Sysop: Wayne Duval
Dial-a-File --------	736-5311	24 HRS	Sysop: Steve Fairbairn IBM
Dragon BBS ---------	873-9603	24 HRS	
Dragon's Lair ------	585-9612	24 HRS	Closed on Sunday
Dude Ranch ---------	589-0079	24 HRS	Sysop: Senor Smooth

Ed net ----------	734-3282	24 HRS	Need user code (V.S.B.)
Electronic P.O. ----	581-1778	24 HRS	3/1200 baud
Element County -----	731-6966	24 HRS	Sysop: Dr. Benway
E.M.U. ----------	929-8812	24 HRS	
Fantazia ----------	594-8165	24 HRS	
Fast Master --------	594-7398	21:00-09:00	TRS80 board
Frog Hollow --------	937-0906	24 HRS	TRS80 board
Garden of Eden -----	432-9996	24 HRS	3/1200 baud Christian board
Gerbildome ---------	980-3822	24 HRS	Sysop: Tasslehoff Blue Board
Ham/Scout Delight --	662-1126	16:30-08:00	Ham radio/Scouts/Scouters only
Hav Info ----------	682-1991	24 HRS	No password required!
The Hospital -------	731-0917	24 HRS	Sysop: The Torch Apple Board 300b
Iblis BBS ----------	872-2316	24 HRS	IBM 3/12/2400 baud
Images BBS ---------	261-4495	24 HRS	
Infoworks ----------	421-3282	24 HRS	3/1200 baud
Land of Confusion --	872-4937	24 HRS	Sysop: Micky Mouse 3/12/2400b
(or is that	872-0920?	Check VOICE first!!)	
Late Night ---------	261-9149	24 HRS	Sysop: The Spark 3/1200 baud
Lazy Bear's Den ----	291-2226	24 HRS	Sysop: Lazy Bear Hal Board
London Drugs Net ---	872-0920	24 HRS	3/1200 baud
Master Control -----	929-7626	24 HRS	Sysop: Wind Rider Blue Board
Mid Knight ---------	942-5258	24 HRS	Sysops: Wizard & Id Vision bd.
Midnight Lounge ----	534-6499	24 HRS	Blue Board
Mind Link** --------	533-2312	24 HRS	3/12/2400b Sysops: Reiter/Allen
No-Name BBS --------	987-3799	24 HRS	3/1200 baud Various computers
Oneiro's Oracle ----	430-4419	24 HRS	Sysops: Oneiro & Boronia
The Other Side -----	588-7562	24 HRS	Sysop: Flemming B. 3/1200 baud
Peep Hole ----------	526-3587	24 HRS	Sysop: Six Inches
Perspective Vortex -	888-0052	Unsure	Commodore
Protech ------------	321-1366	24 HRS	3/1200 baud
PU BBS -------------	526-3389	24 HRS	TI board
Realm of the Knights	263 8573	24 HRS	20 megs online
Realm of Reality ---	941-8077	21:00-10:00	Fantasy role plays
RBBS Poco ----------	936-6227	24 HRS	300/1200 baud
Saga ---------------	254-1670	24 HRS	
Sam Oben -----------	879-9871	24 HRS	
Smokey Mountain ----	462-8753	24 HRS	Sysop: Susan
Sota BLUE ---------	683-1914	24 HRS	
Sota FAST ----------	688-5061	24 HRS	TRS80
Speakeasy ----------	435-7699	24 HRS	Apple board
Stardust Gallery ---	687-0168	24 HRS	Sysop: Holly Blue Board
Star trader --------	272-2549	24 HRS	Mostly Atari
Sungod Country -----	943-3358	24 HRS	Sysop: Big Geoff Commodore files
Sunshine BBS -------	943-1612	24 HRS	3/1200 Apple //e Real names only
Swingaxle Retreat --	597-2459	24 HRS	HAL board
S.F.U./MTS --------	294-4180	24 HRS	Info at 291-3234
Twilight zone ------	731-2724	24 HRS	Sysop: Skillman
UBC Line -----------	228-9051	24 HRS	
UBC Nimnet ** ------	228-5011	24 HRS	
Vanc'r PC Users BBS	434-3434	24 HRS	
A Wayward Sparrow --	984-6984	24 HRS	Sysop: Andy Anderson
Wild Den -----------	589-4698	24 HRS	
West End BBS -------	669-7170	24 HRS	TI board
White Rock TI BBS --	531-6423	24 HRS	
.38 Special Exchange	980-3238	24 HRS	Susop: Trainer Commodore

ETHER COMPUTING

John Brohman

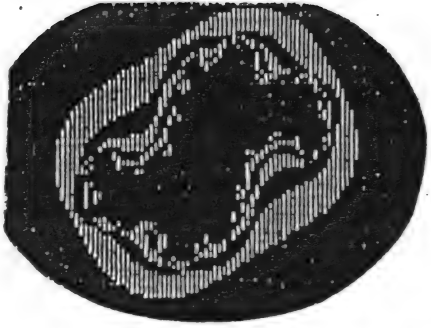
This is one of those things that can be used as building block for something bigger. In itself, it is no more than a curiosity. I recently bought a small FM transmitter kit from RAE for the grand price of $10.00. It was strictly impulse as I had no use for it at the time. I built it and it worked perfectly. I had an idea. Is it possible to transmit data from Sinclair to Sinclair via radio? In theory it seemed possible. The TS 1000 uses an audio signal to load and save data.

To test out my theory, I loaded a program from tape and then saved it to my ghetto blaster cassette recorder via the transmitter and FM radio. I plugged the mike cable from the TS 1000 into the mike jack of the transmitter. I tuned the ghetto blaster to the frequency of the transmitter and set it to record. I had the TS 1000 save the program. I took the tape I had recorded off the air and loaded it into the computer cassette. I then loaded the program back into the computer. Viola! It loaded perfectly.

The next step was to see if the computer would load directly from the speaker jack of the radio without the use of tape. I connected the earphone jack of the computer recorder to the mike input of the transmitter. I connected the earphone jack of the computer to the speaker jack of the radio. I told the computer to load. Viola! It loaded the program directly off the air.

The next step will be to save directly to the transmitter from one computer and load directly off the air to another computer. I don't have two computers so this last experiment will probably be done at the group meeting. It SHOULD work.

Now we come to the hard part. What practical applications does this have? Well, depending on the number of radios available, you could load several computers with the same program at the same time. Possible classroom applications. Two CLOSE neighbours could exchange public domain software. A remote TS 1000 using the club I/O port, could have software that regularly recorded port status and saved it to a transmitter which would relay it back to a base station. Using multi-tasking and a receiver/transmitter combination, a remote TS 1000 could be used in robotics applications. Now I'm sure that I have just scratched the surface of possible applications of this technique. I'll leave it to others to fully exploit it.



MetaMedia Productions

Meta Media Productions is pleased to announce the release of FRACTAL, a mathematically based graphics generating program for the Sinclair QL computer. Since the August 1985 publication of the algorithm for Mandelzoom in Scientific American by A.K.Dewdney, programmers around the world have implemented this fascinating function on their various machines.

Most implementations use floating point & hence suffer from speed problems because the algorithm is recursive & calculation intensive. Now Meta Media Productions has implemented Mandelzoom for the Sinclair QL in floating point and in fixed point. In fixed point it is possible to generate a screen in approximately 1/10 of the time that it takes in floating point. See the table below for the actual comparison figures.

Besides Mandelzoom, Meta Media Productions has implemented another recursive function in the complex plane called "PEANOZOOM" after the 19th century mathematician. A different function called "CIRCLE^2" has been included as well.

Part of the package is a Screen Manipulator, which lets you zoom quadrants, recolour, flip and xor screens, as well as, do a screen dump (for an Epson printer). A screen compression technique, which makes use with microdrives more practical, is a further option. Online Help is available at all times.

Table 1

Type	Real	Imaginary	Side	Iterations	Time
Float	-2	-2	4	32	47 min 13 sec
Float	-2	-2	4	256	123 min
Float	-1.5	-.1	.2	32	122 min
Float	-1.5	-.1	.2	256	approx. 6 hr
Fixed	-2	-2	4	32	3 min 30 sec
Fixed	-2	-2	4	256	15 min
Fixed	-1.5	-.1	.2	32	12 min 45 sec
Fixed	-1.5	-.1	.2	256	38 min 42 sec

FRACTAL is available on microdrive or 5.25" disk (specify tpi) for US$19.95 + $2.00 for shipping.

Also available from MetaMedia Productions: ROMON 1.25 an eprom based monitor/disassembler for the QL. ROMON sells for US$34.95 + $2.00 for shipping.

Soon to be released - Q_LINK : a complete telecommunications package with many features: Xmodem [CRC & Checksum] and Ascii transfer of files; Signon messages; Dial and Autodial; Edit phone list; Edit signon messages; Edit modem command strings; Features an integral Editor for Document creation; Allows you to edit the capture buffer; makes it easy to upload downloaded info, Simply mark the block & save or Ascii transfer it. 300 baud or 1200 baud operation, with your choice of Xon/Xoff, Zoom or Null mode. Comes with an Unsqueeze utility and a delibrarying utility for CP/M files.

>EOF

FACTORS and PRIME NUMBERS

By Rusty Townsend

Here are two programs that might be of interest to those of you who like to play around with numbers.

I wrote the first program, FACTORS, back in 1982 to use on my TS1000. It will print out all the integer factors of a given number, or show that the given number is a prime number.

I recently acquired a TS2068 and, considering all its improvements over the TS1000, expected that it would calculate math problems much faster. I was surprised to find that it is actually slower than the TS1000!

The number 1111111 is the product of 239 qnd 4649, both of which are prime numbers. The TS1000, in FAST, will print out those two factors in approximately 2 minutes and 15 seconds. The TS2068 takes a full 3 minutes to do the same thing!

I wrote the second program, PRIMES, to use on my recently-acquired TS2068. It will print out all the prime numbers in a given range of numbers. I no longer have a TS1000 to do a comparision, but I can tell you that the TS2068 takes 1 minute and 10 seconds to show that 1009 is the only prime number from 1000 to 1010.

Obviously I could save some time if both programs were written or compiled into machine code. Not having learned machine code yet, I have considered getting a compiler like TIME MACHINE. However, I am one of those who have ordered a QL kit, and until I get it assembled and running,I am reluctant to order anything else. (I have also put off ordering an interface to connect this TS2068 to my idle Roland printer.)

If some reader can put these programs into machine code, particularly via TIME MACHINE, I would be interested to hear how much faster the compiled programs run the examples I've given above.

```
Program: FACTORS
  10 INPUT N
  20 PRINT N
  30 LET D=2
  40 LET N=N/D
  50 IF INT N=N THEN PRINT D,N
  60 IF INT N=N THEN GO TO 40
  70 LET N=INT (N*D+.1)
  80 LET D=D+1
  90 IF D>N THEN PRINT D-1;" IS
THE FINAL PRIME FACTOR."
 100 IF D>N THEN STOP
 110 GO TO 40
```

```
Program: PRIMES
   5 REM PRIME NUMBER GENERATOR
  10 INPUT A
  20 INPUT B
  30 PRINT "THE PRIME NUMBERS BE
TWEEN "
  40 PRINT A;" AND ";B;" ARE -"
  50 FOR C=A TO B
  60 LET N=C
  70 LET D=2
  80 LET N=N/D
  90 IF INT N=N THEN GO TO 80
 100 LET N=INT (N*D+.1)
 110 LET D=D+1
 120 IF D<N THEN GO TO 80
 130 IF D>N THEN GO TO 150
 140 IF D=C THEN PRINT ,D
 150 NEXT C
```

PORTERFIELD

If it were up to me, we'd go back to the old term: 'For dopes.'

Submitted by Joe Jenkins Jr.

```
   1 INK 0: PAPER 7: BORDER 7: C
LS
   5 PLOT 10,62: DRAW -10,0
  10 PLOT 10,62: DRAW 26,6,-.2:
DRAW 9,4: DRAW 25,0,-.2
  20 DRAW 115,-4,.09: DRAW 48,32
  30 DRAW 17,0: DRAW -16,-30
  40 DRAW -2,-5,-2: DRAW 8,-2
  50 DRAW 0,-2: DRAW -50,-7
  60 DRAW 0,-6: DRAW -3,0
  70 DRAW -55,0,-.3: DRAW 0,9
  80 PLOT 135,47: DRAW 0,-1: DRA
W -62,1,-.3
  90 DRAW 0,8: DRAW 30,6
 100 PLOT 10,62: DRAW 26,-5,.2:
DRAW 40,0
 110 PLOT 185,68: DRAW 50,-3,-.1
 120 PLOT 75,55: DRAW 55,0
 123 PLOT 132,57: DRAW 20,0: DRA
W 40,-3
 130 PLOT 80,65: DRAW 100,-12
 135 PLOT 80,65: DRAW 3,2: DRAW
105,-8: DRAW -5,-7
 140 PLOT 185,48: DRAW 0,6
 150 PLOT 245,95: DRAW -6,0: DRA
W -19,-25: DRAW 13,0
 155 PLOT 140,70: PLOT 139,70
 160 PLOT 44,70: DRAW -3,-2: DRA
W 2,0: DRAW 3,2
 170 PLOT 49,70: DRAW -2,-2: DRA
W 2,0: DRAW 2,2
 180 PLOT 55,70: DRAW -2,-1: DRA
W 1,0: DRAW 0,1
 185 FOR f=3 TO 1 STEP -1
 190 CIRCLE 63,68,f: NEXT f
 200 PLOT 58,69: DRAW 10,0: DRAW
 0,-2: DRAW -10,0: DRAW 0,2
1000 PRINT AT 0,6;"Convair B-58
Hustler"
1001 PRINT : PRINT "Type: Supers
onic medium bomber"
1002 PRINT "Power plant:15,600 l
b J79-GE-3B"
1003 PRINT "Dimensions:Span, 56f
t 10in                  Length, 9
6ft 9in"
1004 PRINT "                Height 31
ft 5in"
1005 PRINT "Weight:gross, over 1
60,000 lb."
1006 PRINT AT 17,0;"Performance:
 max speed 1,385mph"
1007 PRINT "                    at 40,0
00 ft"
1008 PRINT TAB 13;"service ceili
ng,                  60,000 ft"
```

ZVOICE TEST FOR THE TS2068

```
  10 PRINT AT 9,3;"ZVOICE TEST F
OR THE TS2068"
  20 REM
  30 REM BY Ken Abramson

  40 FOR N=1 TO 43
  50 READ V
  60 PAUSE 9
  70 GO SUB 130
  80 NEXT N
  90 DATA 42,15,11,34,51,26,13,3
7,31,45,20,37,15,11,55,4,4,4,25,
58,4,55,9,19,60,4,25,31,11,12,13
,4,12,43,1,46,52,42,19,44,34,4,4
 100 PAUSE 30
 110 RESTORE
 120 GO TO 40
 130 OUT 23,V
 140 RETURN
```

MEMBER PROFILE

By Gerd Breunung

The whole thing started at the Robson Square Media Centre Computer Fair in mid September 1983. For me the most interesting display was that of the TIMEX-SINCLAIR User's Group. There was Ken Abramson's ZX 81 exhibited in a plexiglass case - you could actually look inside and see the works ! Also there were a disc drive and extension boards built by club members. John Brohman explained to me just how much you can do with these little machines and Bob Lussier said that they just happened to be on sale at A&B Sound for only $99.95 with 16K RAM Pack. Well that same afternoon I dashed over there and picked one up while there were still some left and joined the club.

Ever since then I have attended just about every club meeting and built enthusiastically every project that Karl Brown had created for our club : the ZX I/O Board, the Z SOUND Board, and the Z SPEAK Board. I also bought a proper key board from him and copied his external plug-in feature allowing the use of built-in and/or external key board. I have learned a lot from all hardware & software ideas contributing club members.

I have no formal training in electronics, being a mechanical design draftsman by trade.

I had built BERT, Karl Brown's educational robot, and I needed a computer or terminal with RS232 port to program BERT. So I built ETI's RS232 Board, which turned out to have had bugs right in the printed circuit board layout. Fortunately I had competent help (from my boss) in troubleshooting the completed board and have it working.

My only printer is the T/S 2040 and i bought my WORD SINC II both of which i am using for the production of this article.

Other completed hardware projects are Wilf Rigter's 8K NUM, his JOYSTICK INTERFACE Board (this is really something : it uses the 2K RAM surplussed by the 8K NUM installation !) and his latest release , Z VOICE. I also obtained a non-working 2050 modem and a second hand green screen monitor. Thanks to Harry Slot's generous help both are now working just fine.

I have collected software ranging from games to business applications including technical and educational programs. A spare RAM Pack and a couple of T/S 1000 are "stashed away" in case something goes wrong to insure my stay with ZX computing. I have never even had a chance to play with a 1500, a SPECTRUM, a 2068 or a QL. So much do I enjoy participating in our club and working with my T/S 1000 that i do not have time to look at other computers.

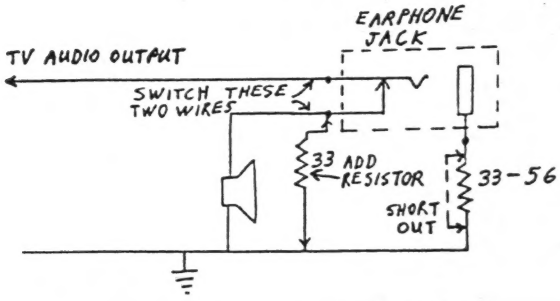
With programs like "HIGH-RES BASIC", "HIGH RES-CHESS", "DUNGEON OF YMIR", and Multy-Tasking just released in early 1987 for T/S 1000 & ZX 81, we can all look forward to interesting SINCLAIR computing for years to come.

USE YOUR TV SPEAKER FOR PERIPHERAL AUDIO

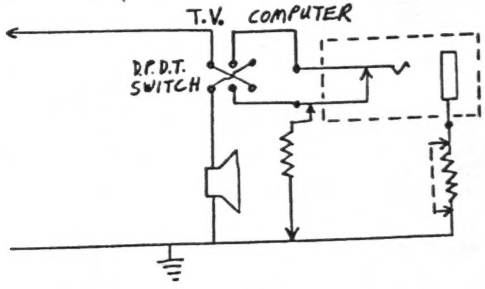
By Ken Abramson

If you wish to use your TV loudspeaker for your computer sound or speech synthesizer peripheral, switching two of the three wires (not the ground wire) going to the TV earphone jack and adding a resistor should do it. The 33 Ohm resistor keeps the TV audio amplifier relatively happy while the speaker is being used by the computer. Of course, the earphone jack will no longer function as an output jack for the earphone, but will now be used as an input jack for the speech synthesizer or peripheral audio output.

NOTE: often there is a resistor (33 to 56 OHMS) in series with the ground connection of the earphone jack, used to reduce the volume to the earphone. Just short circuit this resistor by soldering a piece of wire across it.



If you want to "have your cake and eat it too," you can use a miniature double pole double throw toggle switch to switch from TV OUTPUT to COMPUTER INPUT (do not leave your peripheral plugged into the TV when the switch is in the TV position).



CAUTION: These circuits should only be connected to a peripheral output stage that would normally connect to a low impedance (4 to 32 Ohms) loudspeaker or headphones. The peripheral device must have its own built-in amplifier.

Harry S. has mentioned the possibility of 60HZ leakage on the TV chassis (older TVs). This could introduce noise into the peripheral circuitry (although I have found no problem with my 12 inch Sony).

RAMPACK or INTERNAL UPGRADE

...Tim S. has supplied the group with a loaner TS 1000 converted to 64K inside as well as a loaner 16K converted to 64K. Those members wishing to convert either their Rampacks or machines please supply me with the following: the Rampack or machine packed and wrapped for shipping and correct postage to the U.S. already afixed; a bank draft in the favour of T.Stoddard for $20.00US for the Rampack or $38.00US for the machine. I will in turn give you either a converted machine or Rampack. When you receive yours back from Tim you return the loaner to me which goes on to the next person in line.

****

MURPHY'S LAWS (cont'd)

...from SINC-LINC v5#1

-- If you can distinguish between good advice and bad, you probably don't need advice at all.

-- A complex system that doesn't work is invariably found to have evolved from a simple system that worked well.

-- No job is so simple that it can't get screwed up.

-- The person who said something can't be done should never interrupt the person doing it.

****

SUBMISSIONS

Everyone is encouraged to submit articles to the newsletter but please use 36 column format on 2040 printer, dot-matrix, or typewriter. If using 2040 & 2068 combo, please use 'fat' print.

IMPORTANT : Please check your spelling before submission. It's amazing how many really bright computer whizes can not spell worth a darm.

INTEGER VALUES OF POSITIVE AND NEGATIVE NUMBERS.

By Rusty Townsend.

Using my TS2068 and VU-CALC, I was setting up a spread-sheet format in which one row of cells was to calculate and display the integer value of a percentage of another number that might be either positive and negative.

I soon found out that my idea of the integer value of a negative number was different to what a computer will produce.

To check this out, I wrote the following program and input several values. The result from two of those inputs is printed after the program listing.

When using integer values, we usually want the integer value that is 'less than' the number and its decimal appendage, but in the sense that the integer value is closer to zero. Hence we expect the integer of x.1 to be x, and the integer of-x.1 to be -x.

When you examine the printed results of my test program, you'll see that the computer isn't progammed to think like us in this regard. It sees the integer value of a number with a decimal appendage as the next SMALLER whole number. Hence it will give you x as the integer of x.1, but will give you -(x+1) as the integer of -x.1, i.e. the integer of -2.1 is -3.

Technically the computer is correct. -3 is the next whole number that is smaller than -2.1.

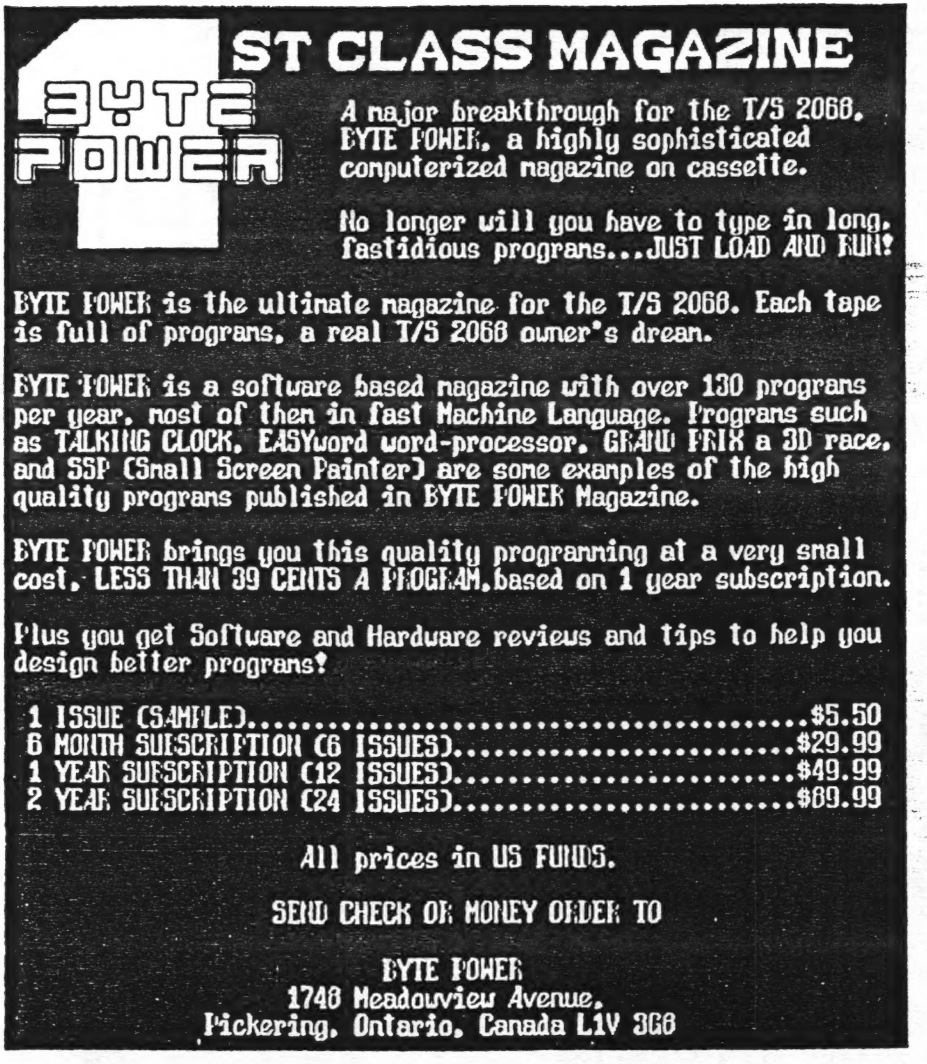
Generally, we will also want a number and its decimal appendage to be rounded off from .5 up to the next whole number that is FURTHER from zero, and from less than .5 down to the whole number that is CLOSER to zero.

Note that the formats shown in Lines 130 and 150 does accomplish this, although when handling negative numbers, not in the same manner as we think.

I hope all this will be of some use to you when working with the integer and/or rounded-off values of negative numbers.

```
  10 INPUT A
  20 PRINT "THE VALUE ENTERED WA
S ";A
  30 PRINT
  40 PRINT "INT (A)= ";INT (A)
  50 PRINT "INT -(A)= ";INT -(A)
  60 PRINT "INT (-A)= ";INT (-A)
  70 PRINT "-INT (A)= ";-INT (A)
  80 PRINT "-INT -(A)= ";-INT -(
A)
  90 PRINT "-INT (-A)= ";-INT (-
A)
 100 PRINT
 110 PRINT "ROUNDING OFF TO NEAR
EST WHOLE NUMBER"
 120 PRINT
 130 PRINT "INT (A+.5)= ";INT (A
+.5)
 140 PRINT "INT -(A+.5)= ";INT -
(A+.5)
 150 PRINT "INT (-A+.5)= ";INT (
-A+.5)
 160 PRINT "-INT (A+.5)= ";-INT
(A+.5)
 170 PRINT "-INT -(A+.5)= ";-INT
 -(A+.5)
 180 PRINT "-INT (-A+.5)= ";-INT
 (-A+.5)
```

```
THE VALUE ENTERED WAS 1.4

INT (A)= 1
INT -(A)= -2
INT (-A)= -2
-INT (A)= -1
-INT -(A)= 2
-INT (-A)= 2

ROUNDING OFF TO NEAREST WHOLE NU
MBER

INT (A+.5)= 1
INT -(A+.5)= -2
INT (-A+.5)= -1
-INT (A+.5)= -1
-INT -(A+.5)= 2
-INT (-A+.5)= 1



THE VALUE ENTERED WAS 1.6

INT (A)= 1
INT -(A)= -2
INT (-A)= -2
-INT (A)= -1
-INT -(A)= 2
-INT (-A)= 2

ROUNDING OFF TO NEAREST WHOLE NU
MBER

INT (A+.5)= 2
INT -(A+.5)= -3
INT (-A+.5)= -2
-INT (A+.5)= -2
-INT -(A+.5)= 3
-INT (-A+.5)= 2
```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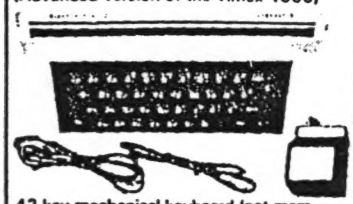

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